to be limited by what has been particularly shown and described, except as indicated by the appended claims. All publications and references cited herein are expressly incorporated herein by reference in their entirety.

What is claimed is:

Sub A1

1. A method of fabricating a corrosion and erosion resistant component, comprising the steps of:

providing a core having a predetermined shape;

applying a first material onto at least a portion of the core;

substantially enclosing the first material within a capsule;

introducing a quantity of a second material within the capsule such that at least some of the first material is in contact with at least some of the second material; and

causing the first material to metallurgically bond to the second material,

wherein at least one of the first material and the second material is in powder form prior to the step of causing the first material to metallurgically bond to the second material.

2. The method of claim 1, wherein the first material is more corrosion resistant than the second material.

Sub A2

3. The method of claim 1, further comprising the step of:

following the step of causing the first material to metallurgically bond to the second material, removing the core and the capsule.

4. The method of claim 3, wherein the core and the capsule are each removed via a process selected from the group consisting of machining and pickling.

5. The method of claim 1, wherein the step of applying the first material onto at least a portion of the core is accomplished via one of a spraying technique, a welding technique and a chemical process.

6. The method of claim 5, wherein the first material is applied via a spraying technique selected from the group consisting of spray deposition, plasma spraying, high velocity oxy-fuel spraying.

7. The method of claim 5 wherein the first material is applied via a welding technique selected from the group consisting of weld overlaying, plasma transfer arc welding, laser welding and gas metal arc welding.

8. The method of claim 5, wherein the first material is applied via a chemical process selected from the group consisting of electrolysis, chemical precipitation, adhesive bonding, chemical vapor deposition, and physical vapor deposition.

9. The method of claim 1, wherein the first material is selected from the group consisting of metal-based alloys, cermets and ceramics.

Sub A7

10. The method of claim 9, wherein the first material is a metal-based alloy selected from the group consisting of nickel-based alloys, cobalt-based alloys, iron-based alloys and stainless steels.

11. The method of claim 1, wherein the second material is a metal-based alloy.

12. The method of claim 11, wherein the second material is a stainless steel.

13. The method of claim 1, wherein the core and the capsule are each formed from a carbon steel sheet metal.

14. The method of claim 1, wherein the first material and the second material are metallurgically bonded together via hot isostatic pressing for a predetermined time at a predetermined temperature and a selected pressure.

15. The method of claim 14, wherein the predetermined temperature is in the range of about 1500°F to 2500°F, wherein the selected pressure is in the range of about 5000 psi to 45000 psi, and wherein the predetermined time is in the range of about two hours to six hours.

16. The method of claim 15, wherein the predetermined temperature is in the range of about 1800°F to 2200°F, wherein the selected pressure is in the range of about 13000 psi to 16000 psi, and wherein the predetermined time is in the range of about three hours to five hours.

17. The method of claim 16, wherein the predetermined temperature is in the range of about 2000°F to 2100°F, wherein the selected pressure is in the range of about 14500 psi to 15500 psi, and wherein the predetermined time is about four hours.

18. A corrosion and erosion resistant component fabricated in accordance with the method of claim 1.

Sub A4

19. A method of fabricating a corrosion and erosion resistant component, comprising the steps of:

providing a core having a predetermined shape;

spray-depositing a first material in powder form onto at least a portion of the core, wherein a plurality of pores are formed in the deposited first material;

substantially enclosing the first material within a capsule;

introducing a quantity of a second material in powder form within the capsule, wherein the second material is less corrosion resistant than the first material, and wherein at least some of the second material enters at least some of the plurality of pores of the first material; and

hot isostatically pressing the first material for a time in the range of about two hours to about six hours at a temperature in the range of about 1500°F to 2500° and at a pressure in the range of about 5000 psi to 45000 psi, such that the first material metallurgically bonds to the second material.

20. A corrosion and erosion resistant component fabricated in accordance with the method of claim 19.

SubA5>

21. A method of fabricating a corrosion and erosion resistant component, comprising the steps of:

providing a core having a predetermined shape;

applying a first material onto at least a portion of the core;

substantially enclosing the first material within a capsule;

introducing a quantity of a second material within the capsule such that at least some of the first material is in contact with at least some of the second material; and

causing the first material to metallurgically bond to the second material,

wherein the fabricated component has a non-linear shape.

AddA6>